Listing of Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

1. (Currently Amended) A composition for enhancing immune response in an animal, comprising: a peptide selected from the group SEQ. ID. NO: 1, SEQ. ID. NO: 3, SEQ. ID. NO: 4, SEQ. ID. NO: 5, SEQ. ID. NO: 6, SEQ. ID. NO: 7, and functional equivalents, and further comprising an antigen.

2. (Cancelled).

3. (Currently Amended) The composition of claim [[2]]1, wherein the ~~first~~ antigen is cholera toxin.

4. (Currently Amended) The composition of claim [[2]]1, wherein the peptide and ~~first~~ antigen comprise a fusion protein.

5. (Original) The composition of claim 1, wherein the composition is capable of mucosal administration.

6. (Previously Presented) The composition of claim 1, wherein the composition is formulated as a systemic adjuvant.

7. (Previously Presented) The composition of claim 1, wherein the composition is formulated as a mucosal adjuvant.

8. (Previously Presented) The composition of claim 1, wherein the composition is formulated as an epidermal adjuvant.

9. (Currently Amended) A method of enhancing an immune response in an animal comprising: providing a ~~peptide selected from the group SEQ. ID. NO: 1, SEQ. ID. NO: 3, SEQ. ID. NO: 4, SEQ. ID. NO: 5, SEQ. ID. NO: 6, SEQ. ID. NO: 7, and functional equivalents,~~ a composition of claim 1 to the animal.

10. (Cancelled)

11. (Currently Amended) The method of claim [[10]]9, wherein the ~~first~~ antigen is a cholera toxin.

12. (Currently Amended) The method of claim 11, wherein the peptide and the ~~first~~ antigen comprise a fusion protein.

13. (Previously Presented) The method of claim 9, wherein the step of administering the peptide is carried out mucosally.

14. (Previously Presented) A method for delivering a cargo protein to an animal cell, comprising: providing a fusion protein comprising: a peptide selected from the group SEQ. ID. NO:1, SEQ. ID. NO: 3, SEQ. ID. NO:4, SEQ. ID. NO:5, SEQ. ID. NO:6, SEQ. ID. NO:7, and functional equivalents; and a cargo protein, wherein the cargo protein is linked to the peptide ; and administering the fusion protein to the animal.

15.-16. Cancelled.

17. (Previously Presented) The method of claim 14, wherein the cargo protein is an antigen.

18. (Previously Presented) The method of claim 17, wherein the fusion protein presents the antigen to the immune system of the animal.

19. (Previously Presented) The method of claim 17, wherein the antigen is a cholera toxin.

20. (Original) The method of claim 14, wherein the fusion protein is encoded by a DNA sequence capable of being incorporated into a viral DNA vector.

21. (Original) A genetically-modified living cell capable of enhancing immune response in an animal, comprising: a first DNA sequence encoding a peptide selected from the group SEQ. ID. NO: 1, SEQ. ID. NO : 3, SEQ. ID. NO : 4, SEQ. ID. NO: 5, SEQ. ID. NO: 6, SEQ. ID. NO: 7, and functional equivalents.

22. (Previously Presented) The genetically-modified living cell of claim 21, further comprising a second DNA sequence encoding a first antigen.

23. (Previously Presented) The genetically-modified living cell of claim 22, wherein the antigen is a cholera toxin subunit.

24. (Original) The genetically-modified living cell of claim 21, wherein the peptide is capable of enhancing a mucosal immune response in the animal.

25. (Original) The genetically-modified living cell of claim 22, wherein SEQ. ID. NO: 8 comprises the first DNA sequence and the second DNA sequence.

26. (Previously Presented) The genetically modified living cell of claim 22, wherein SEQ ID NO.: 9 comprises the first DNA sequence and the second DNA sequence.

27. (Previously Presented) The genetically-modified living cell of claim 22, wherein the DNA encoding the peptide is genetically fused to the DNA encoding the first antigen.

28. (Original) A method for constructing a fusion protein for enhancing immune response in an animal, comprising: constructing a vector including a first DNA molecule encoding for a peptide selected from the group SEQ. ID. NO: 1, SEQ. ID. NO: 3, SEQ. ID. NO: 4, SEQ. ID. NO: 5, SEQ. ID. NO: 6, SEQ. ID. NO: 7; and linking the vector to a second DNA molecule encoding for a first antigen.

29. (New) The composition of claim 4, wherein the fusion protein comprises the protein of SEQ ID NO:9.

30. (New) The method of claim 12, wherein the fusion protein comprises the protein of SEQ ID NO:9.